REMARKS

The Office Action dated September 19, 2002, has been carefully reviewed in light of the Examiner's helpful comments and suggestions.

Claims 1, 5, and 6 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg in view of Yamana. Claim 2 stands finally rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg in view of Yamana and further in view of Amano. And claim 3 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Rosenberg in view of Yamana and further in view of Fujimura. These references have been carefully reviewed but are not believed to show or suggest Applicant's invention as now claimed. Reconsideration and allowance of the pending claims is therefore respectfully requested in view of the following remarks.

Applicant believes that amended claim 1 does not present new issues requiring further consideration or search and, therefore, respectfully requests entry of this amendment. Moreover, support for amended claim 1 is found at page 5, line 17-20, of the specification. Amended claim 1 now requires the first lens to have an elongated convex shape having two convex end portions, and having a length longer than a length of the arrangement of the infrared rays emitting elements. This configuration expands the infrared ray radiation range in the direction of the X-line over both ends of the first lens in the X-line direction. Stated somewhat differently, since the infrared rays radiation range is expanded over the both ends of the X-line of first lens, the infrared rays can be transmitted in a wide range.

However, the light source of Yamana is for illuminating linear fields, such as for a facsimile image sensor. The radiation is limited in a narrow linear range in the Y and Z lines as

LAW OFFICES
DENNISON, SCHULTZ & DOUGHERTY
612 CRYSTAL SQUARE 4
1745 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VIRGINIA 22202-3417
703 412-1155

shown in Figures 2 and 14. Also, as the Examiner has conceded and stated in the Office Action, Yamana also requires the use of light-pervious resin 5 to minimize the illuminance ripple in the X-X' direction. Therefore, the combination of Rosenberg and Yamana teach away from the claimed invention, which requires expansion of the radiation range.

Similarly, the device of Amano is operable to make the outgoing light beams converge to form images at a focal point of the lens. Therefore, the Amano reference also clearly teaches away from the claimed invention.

Moreover, even if Rosenberg and Yamana were combined, the combination would not teach all the limitations of amended claim 1, namely, the first lens having an elongated convex shape with convex end portions at both ends.

Claims 5 and 6 are dependent from claim 1 and are therefore allowable for the same reasons as claim 1.

Claim 2 is dependent from claim 1, and since Amano does not address the shortcomings of the Rosenberg and Yamana combination, it is respectfully submitted that claim 2 is patentable over prior art for the same reasons provided in connection with claim 1.

Claim 3 is dependent from claim 1 and is patentable over prior art for the same reasons provided in connection with claim 1.

The prior art references made of record by the Examiner have each been considered but are not believed to obviate against the allowability of the claims as amended. It is noted that none of these references have been specifically applied by the Examiner against any of the original claims.

Each issue raised in the Office Action dated September 19, 2002, has been addressed and

LAW OFFICES
DENNISON, SCHULTZ & DOUGHERTY
612 CRYSTAL SQUARE 4
1745 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VIRGINIA 22202-3417
703 412-1155

it is believed that claims 1-3 and 5-6 are in condition for allowance. Wherefore, reconsideration and allowance of these claims is earnestly solicited.

Respectfully submitted,
DENNISON, SCHULTZ &
DOUGHERTY

By _____
Amir H. Behnia
Reg. No. 50,215
(703) 412-1155 Ext. 16

LAW OFFICES
DENNISON, SCHULTZ & DOUGHERTY
612 CRYSTAL SQUARE 4
1745 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VIRGINIA 22202-3417
703 412-1155

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

1. (Twice Amended) An infrared communication device comprising:

a substrate;

a plurality of infrared rays emitting elements mounted on the substrate and arranged on an X-line;

an infrared rays receiving element mounted on the substrate at a position on the X-line;

a first lens elongated in a direction of the X-line and provided on the infrared rays emitting elements; and

a semispherical second lens provided on the infrared rays receiving element;

the first lens having an elongated convex shape having two convex opposing end portions, and having a length longer than a length of the arrangement of the infrared rays emitting elements so as to expand infrared rays radiation range in the direction of the X-line over the two convex opposing end portions of X-line of first lens.

LAW OFFICES
DENNISON, SCHULTZ & DOUGHERTY
612 CRYSTAL SQUARE 4
1745 JEFFERSON DAVIS HIGHWAY
ARLINGTON, VIRGINIA 22202-3417
703 412-1155